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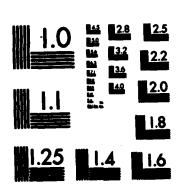
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MODIFYING SALES SUMMARIES CAN AID FOREST PRODUCTS INDUSTRIES

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ABSTRACT

This Note illustrates how a sales summary can be modified to separately identify changes in sales realization caused by changes in market prices and by changes in

the product mix sold. With this information, a sales summary can become a helpful record to gage effects of past production and marketing decisions.

INTRODUCTION

A typical sales summary prepared from accounting records of a wood products manufacturer presents numerous figures related to product sales. Monthly, year-to-date, and year-ending sales summaries are needed for managers to evaluate the financial status of operations, and to appraise effects of past product and marketing decisions.

The interpretation of sales statistics can, however, lead to problems. In accounting reports summarizing sales results, the results of the effects of marketing and production decisions become combined with the effects of shifting market prices. The purpose of this paper is to illustrate how a sales summary

can be modified to separately identify the variances (differences in the accounting sense) in sales realization caused by changes in market prices and by changes in the product mix sold.

Measuring Price Variance

The object of measuring variances in accounting systems is usually associated with operating statements in which actual costs are compared with past costs, budgets, or

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other standards. The results measured indito the variance of actual costs from a set undends. Price replances within the sale kary ban be missisted in the sales man ner. To illustrate how this can be accom-pliated, the "Prior-Pariod" average price for ach product in table 1 is used as a standard to measure the variance of price for each corresponding product in the "Current-Period." These variances are identified for each product as a price variance. The average price variance for any group of products is then calculated in the same manner as the corresponding average price. That is, neither the figures of average price nor of variance are additive. Each product's average price must be weighed by the corresponding number of units sold to determine a gross price variance. The gross price variances are then added and the sum divided by the total per of units sold, as illustrated in table 2. the "Current-Period" statistics from

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"Average price" is used hereth meen the same as "average realization." white is the dollar amount per standing physical unit reulized from sales of a product liner actual transportation cost, discounts, and rebetes are deducted.

Measuring Mix Variance

When the price variances are impown, calculating mix variances die to changes in the product mix becomes shiftingly simple. The mix variance is calculated from the difference in the average price for each period for corresponding product groups ashes the corresponding price variance. That is, the difference between the "Prior-Period" average price and the corresponding price for the "Current-Period" is the total variance due to price variances and product mix variance. The mix variance is then determined by subtracting the price variance from the total variance, as noted in table 3, by again using the statistics from table 1.

Table 1.—Sales summary modified by incorporating price and mix variances

U	Modified sales summary							
Products .		Prior-Peri	od	С	urrent-Pe	riod	Varia	nces
* .	Vol- ume		Price1	Mix2				
No. 3 and better	Mbf	\$/M bf	Dol	WP	\$/M bf	Dol	\$/M bf	\$/M bf
1 x 4 1 x 6 1 x 8 Combined	65 146 114 325	105.00 103.00 103.00 103.40	6,825 15,038 11,742	71 160 125 356	106.00 104.00 105.00	7,668 16,640 13,125 37,433	3.00 1.00 2.00	_ _ _
No. 4 common	323	109.40	33,605	300	100.15	37,430	1.75	
1x4 1x6 1x8	65 114 146	90.00 80.00 83.00	5,860 9,120 12,118	135 56 88	90.00 80.00 83.00	12,150 4,480 7,304	000	111
Combined	325	83.35	27,088	279	85.79	23,934	0	2.44
Total combined	660	93.37	60,693	636	96.64	61,367	0.98	2.20

1Difference in average realization for a product or group of products caused by changes in product prices between two different time periods.

20Hierence in average restization between two time periods caused by change in product mix.

Table 2.—Calculation of unit arise variance

Products	Unit sales		Price variance		Gross price verience Doi	
No. 3 and better						
1x4	71	×	3.00	=	213.00	
1x6	160	x	1.00	=	160.00	
1x8	125	x	2.00	. =	250.00	
Combined	356	×	11.75	=	623.00	

181.78/M bf = 8823.00 + 388 M bf.

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Average unit prices for product sales from a "Prior-Period" are the only statistics needed to measure price and mix variances of a "Current-Period." However, using these variances to interpret the effects of production and marketing decisions has limitations. Sales statistics can only reflect changes in production practices to the extent that the product mix sold is representative of the product mix being produced.

Because of the variety of lag effects that may be caused by inventory and sales practices, special consideration must be given to the length of the accounting periods used for the "Prior-Period" and the "CurrentPeriod". The two periods do not have to be the same length however, for a meaningful basis for interpretation, the representativeness of production as well as the timing to changes in log supplies, in sawing methods, and in other manufacturing practices must be considered.

In addition to the detailed sales information typically presented to the wood products manufacturer, interpretations of the final accounting results of past production and marketing decisions can be made more meaningful if variations of average realization statistics from product sales are analyzed. The sales summary then can become a highly useful record to gage the effects of past decisions on production and marketing.

Table 1.—Calculation of unit selx variance

Products	Average	realization	Var		
	Current- period(2)	Prior- period(1)	Price	Mix1	
	\$/M bf	\$/M b/	\$/M bf	\$/M bf	- POP
No. 3 and better					
Combined	105.15	- 103.40	1.75 =	0.00	ionles
No. 4					-onful
Combined	86.79	- 63.36	- 0.00 =	2.44	:00/
Ali products	98.64	- 93.37	- 0.96 =	2.29	ilty Codes